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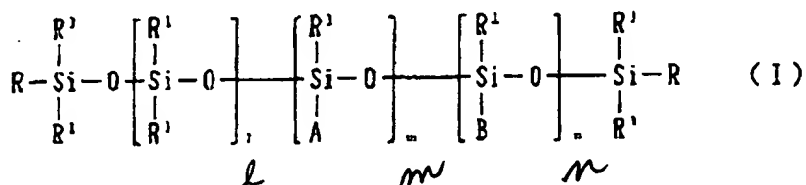
//(C11D 10/02, 1:72)

Patentee : Kao Corp

Title: Liquid detergent composition

## Claims:

1. A liquid detergent composition comprising (a) from 0.05 to 5% by weight of an amino-modified silicone (vi) derivative represented by the following general formula (I) and (b) from 5 to 70% by weight of a surfactant containing from 95 to 75% by weight of the following nonionic surfactant (i) and from 5 to 15% by weight of the following nonionic surfactant (ii), wherein the weight ratio of (a):(b) is from 1 :100 to 1:5.



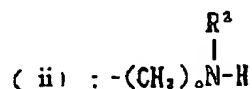
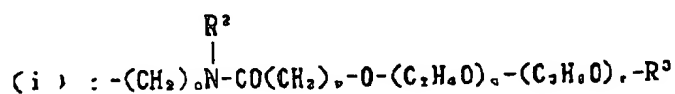
(wherein

$Q$  is from 100 to 600,  $m$  and  $n$  are such numbers as satisfying  $1:m = 100:1$  to  $10:1$  and  $m:n = 1:10$  to  $10:1$ ,

$R$  represents an alkyl group, a hydroxy group or an alkoxy group of from 1 to 4 carbon atoms,

$R^1$  each represents an alkyl group of from 1 to 4 carbon atoms, which may be different from each other,

$A$  represents a group represented by the group (i) or represented by groups (i) and (ii) described below, and the ratio of (ii) in  $A$  is 50 mol% or less in the latter case,



wherein

$a$  is from 2 to 6,

$R^2$  represents a hydrogen atom or an alkyl group of from 1 to 4 carbon atoms,

$p$  is from 1 to 6,

$q$  is from 1 to 20,

$r$  is from 0 to 20,

$R^3$  represents an alkyl group of from 1 to 18 carbon atoms,

$B$  represents  $-(\text{CH}_2)_a - \text{O} - (\text{C}_2\text{H}_4\text{O})_x - (\text{C}_3\text{H}_6\text{O})_y - \text{R}^4$  or  $\text{R}^1$ ,

$R^4$  represents an alkyl group of from 1 to 10 carbon atoms,

x is from 1 to 20, and

y is from 0 to 20.

< nonionic surfactant (1) > nonionic surfactant represented by the following general formula (i):



(wherein  $R_1$  represents a linear or branched alkyl or alkenyl group of from 8 to 18 carbon atoms, or an alkylphenyl group of from 12 to 22 carbon atoms in total,  $R_2$  represents an alkylene group of from 2 to 4 carbon atoms,  $R_3$  represents hydrogen, a methyl or ethyl group, n is an addition mol number of alkylene oxide added so that the HLB value ranges from 12 to 15).

< nonionic surfactant (ii)>

a nonionic surfactant represented by the following general formula (ii), having an HLB value of from 7 to 10, and a content of a compound where  $n = 0$  of 4% by weight or less, with an addition mol number of the compound of the greatest content  $n_{max}$  satisfying the following formula (A):



(wherein  $R_4$  represents a linear or branched alkyl or alkenyl group of from 8 to 18 carbon atoms in average or an alkylphenyl group of from 12 to 22 carbon atoms in total,  $R_5$  represents hydrogen or a methyl group, n is an addition mol number of ethylene oxide added so that the HLB value ranges from 7 to 10).

$$\sum_{i=n_{max}-2}^{i=n_{max}+2} Y_i \geq 60\% \dots (A)$$

2. A liquid detergent composition as defined in claim 1, wherein from 0.1 to 10 parts by weight of a polycarboxylic acid type oligomer which has an average molecular weight of from 500 to 100,000 and a portion of which may be in the form of a salt is blended based on 100 parts by weight of the surfactant (b).

3. A liquid detergent composition as defined in claim 1 or 2, which contains water as a main medium, and has a pH of from 6 to 8.

-2- (WPAT)

AN - 98-213130/19

XRAM- C98-067629

TI - Liquid cleaner compsn.. - contains an amine-modified silicone deriv.

DC - A97 D25

PA - (KAOS) KAO CORP

PR - 96.08.20 96JP-218855

NUM - 1 patent(s) 1 country(s)

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AP -- 96JP-218855 96.08.20

IC1 - C11D-003/37

IC2 - C11D-010/02 C11D-017/08

ICL - C11D-001:72 C11D-001:722 C11D-003:20 C11D-003:37 C11D-010/02

AB - JP10060480 A

The compsn. contains (a) 0.05-5 wt. % an amine-modified silicone deriv. of formula (I), (b) 5-75 wt. % a mixt. of (i) 95-75 wt. % (8-18C alkyl-, alkenyl- or 12-22C alkylphenyl)-poly(oxy-2-4C alkylene) or its methyl- or ethyl-ether with a HLB value of 12-15 and (ii) 5-15 wt. % a similar poly(oxyethylene) or methyl- or ethyl-ether with a HLB value of 7-10, contg. 4 wt. % or less of monomeric ethers and 60 wt. % or more of polyethers within plus or minus 2 of the max. distribution of mol. addition of ethyleneoxide, where the wt. ratio of (a)/(b) of 1/100 - 1/5.  $l = 100-600$ ;  $l/m = 100/1-10/1$ ;  $m/n = 1/10 - 10/1$ ;  $R = 1-4C$  alkyl, OH or alkoxy;  $R_2 = 1-4C$  alkyl;  $A = 1-18C$  alkyl-poly(oxypropylene-oxyethylene)oxy-polymethylenecarboxy-(H or 1-4C alkyl)amido-polymethylene- with/or without (H or 1-4C alkyl)amino-polymethylene-;  $B = 1-4C$  alkyl or 1-10C alkyl-poly(oxypropylene-oxyethylene)oxy-polymethylene-. Also claimed is an aq. soln. of the compsn. with pH of 6-8.

USE - The cleaner for wool, acrylic fibres, polyesters or their mixed fabrics.

ADVANTAGE - The compsn. shows the improved storage stability and gives fabrics the prevention of shrinkage, the good penetration of detergent soln. and the improved finish feeling.

(Dwg. 0/0)

FN - WPI4KGA1.GIF

(19)



JAPANESE PATENT OFFICE

PATENT ABSTRACTS OF JAPAN

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(71) Applicant: **FUJIE:KK**

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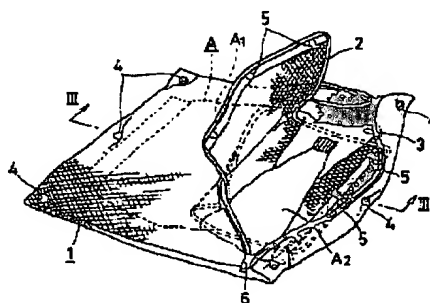
(72) Inventor: **FUJIE HIDEKI**

**(54) NET BAG FOR WASHING SWEATER**

**(57) Abstract:**

**PROBLEM TO BE SOLVED:** To provide a washing net bag special for t sweater used at the time of washing sweater with a washing machine, which is good in the damage preventing effect and shape retention effect for sweater and also can be used as it is for drying.

**SOLUTION:** A belt-like sleeve holder 2 is disposed with only one end thereof sewn in a flat net bag main body 1 capable of storing the body part A1 of a sweater A in spread state, the sleeve part A2 of the sweater A stored in the net bag main body 1 is interposed inside two-folded sleeve holder 2 and held in a locking state, thereby preventing shifting of the sweater in the bag main body.



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